

## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents  
United States Patent and Trademark  
Office  
Box PCT  
Washington, D.C.20231  
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year)

09 October 2000 (09.10.00)

International application No.

PCT/US00/05292

Applicant's or agent's file reference

CM2054/JB

International filing date (day/month/year)

29 February 2000 (29.02.00)

Priority date (day/month/year)

05 March 1999 (05.03.99)

Applicant

INGRAM, David, William et al

1. The designated Office is hereby notified of its election made:



in the demand filed with the International Preliminary Examining Authority on:

07 September 2000 (07.09.00)



in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

Christelle Croci

Telephone No.: (41-22) 338.83.38

**PCT**WORLD INTELLECTUAL PROPERTY ORGANIZATION  
International Bureau

## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>7</sup> :</b> <b>C11D 17/00</b>	<b>A1</b>	<b>(11) International Publication Number:</b> <b>WO 00/52129</b> <b>(43) International Publication Date:</b> 8 September 2000 (08.09.00)
<b>(21) International Application Number:</b> PCT/US00/05292 <b>(22) International Filing Date:</b> 29 February 2000 (29.02.00) <b>(30) Priority Data:</b> 99870039.7                      5 March 1999 (05.03.99)                      EP <b>(71) Applicant (for all designated States except US):</b> THE PROCTER & GAMBLE COMPANY [US/US]; One Procter & Gamble Plaza, Cincinnati, OH 45202 (US). <b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> <u>INGRAM</u> , David, William [GB/BE]; 54, rue du Lac, B-1000 Brussels (BE). <u>WILLEMS</u> , Ingrid, Maria, Elisabeth, Hendrika [BE/BE]; Parkstraat 108/45, B-3000 Leuven (BE). <b>(74) Agents:</b> REED, T., David et al.; The Procter & Gamble Company, 5299 Spring Grove Avenue, Cincinnati, OH 45217-1087 (US).		<b>(81) Designated States:</b> AE, AL, AM, AT, AT (Utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), DM, EE, EE (Utility model), ES, FI, FI (Utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
<b>(54) Title:</b> PRODUCTION PROCESS FOR DETERGENT TABLET		
<b>(57) Abstract</b> <p>The present invention relates to a process for making a detergent tablet, the process comprising a first step of providing a detergent composition, a second step of forming a particulate material comprising the detergent composition, and a third step of compressing the particulate material in a tablet form, the process being characterised in that it further comprises a step of cooling the detergent composition below ambient temperature between the first and the third step.</p>		

**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

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EE	Estonia						

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/05292

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C11D17/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C11D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 896 052 A (PROCTER & GAMBLE) 10 February 1999 (1999-02-10) examples	1-9
X	---	10
A	EP 0 711 828 A (UNILEVER) 15 May 1996 (1996-05-15) cited in the application	1-9
X	page 6, line 31 - line 50; claim 1	10
A	US 5 759 976 A (ANDERSON PATRICIA ET AL) 2 June 1998 (1998-06-02)	1-9
X	claims	10
A	EP 0 716 144 A (UNILEVER) 12 June 1996 (1996-06-12)	1-9
X	page 7, line 4 - line 21; claims	10
	-/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"8" document member of the same patent family

Date of the actual completion of the international search

5 July 2000

Date of mailing of the international search report

17/07/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo.nl,  
Fax: (+31-70) 340-3016

Authorized officer

Grittern, A

# INTERNATIONAL SEARCH REPORT

Interr. .nal Application No

PCT/US 00/05292

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>DATABASE WPI  Section Ch, Week 9434  Derwent Publications Ltd., London, GB;  Class D25, AN 94-276042  XP002111413  &amp; JP 06 207199 A (KAO CORP),  26 July 1994 (1994-07-26)  abstract</p>	1-9
X	<p style="text-align: center;">-----</p>	10

# INTERNATIONAL SEARCH REPORT

information on patent family members

International Application No

PCT/US 00/05292

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0896052	A	10-02-1999	AU 8690298 A	01-03-1999
			EP 0896053 A	10-02-1999
			EP 1015546 A	05-07-2000
			WO 9907819 A	18-02-1999
			ZA 9807089 A	16-02-1999
EP 0711828	A	15-05-1996	US 5658874 A	19-08-1997
US 5759976	A	02-06-1998	AU 714999 B	13-01-2000
			AU 4934096 A	08-10-1996
			BR 9607840 A	16-06-1998
			CA 2215206 A	26-09-1996
			WO 9629387 A	26-09-1996
			DE 69602591 D	01-07-1999
			DE 69602591 T	07-10-1999
			EP 0815195 A	07-01-1998
			ES 2132895 T	16-08-1999
			ZA 9602339 A	16-09-1996
			AT 163193 T	15-02-1998
			AU 699430 B	03-12-1998
			AU 7607594 A	03-04-1995
			BR 9407538 A	26-08-1997
			CA 2169543 A	23-03-1995
			WO 9507976 A	23-03-1995
			DE 69408540 D	19-03-1998
			DE 69408540 T	04-06-1998
			EP 0719325 A	03-07-1996
			ES 2112558 T	01-04-1998
			JP 9503799 T	15-04-1997
			NZ 271952 A	24-10-1997
			US 5552079 A	03-09-1996
			US 5713384 A	03-02-1998
			ZA 9407064 A	24-04-1995
EP 0716144	A	12-06-1996	US 5916866 A	29-06-1999
JP 6207199	A	26-07-1994	NONE	

## PATENT COOPERATION TREATY

PCT

REC'D 09 APR 2001

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference CM2054/JB	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US00/05292	International filing date (day/month/year) 29/02/2000	Priority date (day/month/year) 05/03/1999
International Patent Classification (IPC) or national classification and IPC C11D17/00		
Applicant THE PROCTER & GAMBLE COMPANY et al.		

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JAN 14 2002

TC 1700

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.



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TC 1700

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 07/09/2000	Date of completion of this report 04.04.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Irwin, L Telephone No. +49 89 2399 2527 

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/US00/05292

## I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):  
**Description, pages:**

1-38 as originally filed

### **Claims, No.:**

1-10 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):



# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/US00/05292

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

## **V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

### **1. Statement**

Novelty (N)	Yes: Claims 1 - 9
	No: Claims 10
Inventive step (IS)	Yes: Claims 1 - 9
	No: Claims 10
Industrial applicability (IA)	Yes: Claims 1 - 10
	No: Claims

2. Citations and explanations  
**see separate sheet**

## **VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:  
**see separate sheet**

## **VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:  
**see separate sheet**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/US00/05292

**R l t m V**

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

The following documents (D) are referred to in this communication, and the numbering will be adhered to in the rest of the procedure:

D1: EP 0 711 828 A (UNILEVER) 15 May 1996 (1996-05-15)

D2: EP 0 896 052 A (PROCTER & GAMBLE) 10 February 1999 (1999-02-10)

D3: US 5 759 976 A (ANDERSON PATRICIA ET AL) 2 June 1998 (1998-06-02)

D4: EP 0 716 144 A (UNILEVER) 12 June 1996 (1996-06-12)

**Novelty:**

The subject matter of the independent claim 1 is novel since such a process has not been previously disclosed in the above cited prior art.

Subsequently, the dependent claims 2 to 9 are also novel.

The independent claim 10, however, is not novel since the tablets produced by this process do not differ from those described in the prior art. Details regarding the specific content and properties of the tablet are lacking, and neither does the claim describe any special features of the tablets. Please see D1, description, page 2, lines 5 and 48 - 49; also page 3, lines 36 - 54, and 55+, and the examples, which display some relevant features which correlate with those of the present invention and render the claim not novel.

Therefore, the claims 1 - 9 are considered to be novel, and claim 10 not novel. Art. 33(2) PCT.

**Inventive step:**

The document comprising the closest prior art has been taken to be document D1 since this document discloses a process for making detergent tablets that is also made from compacted powder. This process is also temperature dependent.

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/US00/05292

The technical problem of the present application has been formulated as: "How to provide a process for producing relatively solid detergent tablets which have improved dissolution characteristics while still maintaining the mechanical integrity of the tablets.

The prior art documents do not suggest a process whereby the detergent composition is cooled to below 18°C or the temperature of the surroundings, and since this feature produces detergent tablets that are dispensed more readily (description, page 5, lines 16 - 19), then the process is considered to comprise an inventive step.

Therefore the claims 1 - 9 are considered to be inventive. Art. 33(3) PCT.

**Re Item VII**

Certain defects in the international application

The phrase "... herein incorporated by reference" as used for example in the description on page 28 (line 7), is an expression not to be used since it renders the extent of the protection unclear (Guidelines, PCT/GL/3 III, 4.3a).

The independent claim 1 is not in the two-part form in accordance with Rule 6.3(b) of the PCT, which in the present case would be appropriate, with those features known in combination with the prior art document D1 being placed in the preamble (Rule 6.3(b)(i) PCT) and with the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).

**Re Item VIII**

Certain observations on the international application

An upper limit for the range of temperatures considered to be at ambient needs to be given in claim 2, as within various global regions, the term "ambient" can differ greatly.

The amounts of detergent and binder as disclosed in the claims 7 and 8 should also show an upper limit of these ranges.

# PATENT COOPERATION TREATY

**RECEIVED**

**JUL 21 2000**

From the INTERNATIONAL SEARCHING AUTHORITY

**PCT** P & G Patent Division  
International ITC

## NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT OR THE DECLARATION

(PCT Rule 44.1)

To:

THE PROCTER & GAMBLE COMPANY  
Attn. REED, David T  
5299 Spring Grove Avenue  
CINCINNATI, OHIO 45217-1087  
UNITED STATES OF AMERICA

*P.G. Mather/ETC*  
*cc: EC atty JH/lie*

Date of mailing  
(day/month/year)

17/07/2000

Applicant's or agent's file reference

CM2054/JB

**FOR FURTHER ACTION**

See paragraphs 1 and 4 below

International application No.

PCT/US 00/05292

International filing date  
(day/month/year)

29/02/2000

Applicant

THE PROCTER & GAMBLE COMPANY et al.

1. ☒ The applicant is hereby notified that the International Search Report has been established and is transmitted herewith.

**Filing of amendments and statement under Article 19:**

The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

**When?** The time limit for filing such amendments is normally 2 months from the date of transmittal of the International Search Report; however, for more details, see the notes on the accompanying sheet.

**Where?** Directly to the International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland  
Facsimile No.: (41-22) 740.14.35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no International Search Report will be established and that the declaration under Article 17(2)(a) to that effect is transmitted herewith.

3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Further action(s):** The applicant is reminded of the following:

Shortly after 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

Within 19 months from the priority date, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later).

Within 20 months from the priority date, the applicant must perform the prescribed acts for entry into the national phase before all designated Offices which have not been elected in the demand or in a later election within 19 months from the priority date or could not be elected because they are not bound by Chapter II.

Name and mailing address of the International Searching Authority

 European Patent Office, P.B. 5818 Patentlaan 2  
NL-2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

John De Bruijn

## NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the PCT Applicant's Guide, a publication of WIPO.

In these Notes, "Article", "Rule", and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions respectively.

### INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only.

#### What parts of the international application may be amended?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

#### When?

Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

#### Where not to file the amendments?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

#### How?

Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Administrative Instructions, Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

#### What documents must/may accompany the amendments?

##### Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.

## NOTES TO FORM PCT/ISA/220 (continued)

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:  
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
2. [Where originally there were 15 claims and after amendment of all claims there are 11]:  
"Claims 1 to 15 replaced by amended claims 1 to 11."
3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:  
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or  
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
4. [Where various kinds of amendments are made]:  
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

### "Statement under article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

It must be in the language in which the international application is to be published.

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

### Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the same time of filing the amendments with the International Bureau, also file a copy of such amendments with the International Preliminary Examining Authority (see Rule 62.2(a), first sentence).

### Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, where upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see Volume II of the PCT Applicant's Guide.

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>CM2054/JB</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/US 00/ 05292</b>	International filing date (day/month/year) <b>29/02/2000</b>	(Earliest) Priority Date (day/month/year) <b>05/03/1999</b>
Applicant  <b>THE PROCTER &amp; GAMBLE COMPANY et al.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

**4. With regard to the title,**

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

**5. With regard to the abstract,**

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

**6. The figure of the drawings to be published with the abstract is Figure No.**

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☒ **None of the figures.**

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/05292

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C11D17/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C11D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A ✓	EP 0 896 052 A (PROCTER & GAMBLE) 10 February 1999 (1999-02-10) examples	1-9
X		10
A ✓	EP 0 711 828 A (UNILEVER) 15 May 1996 (1996-05-15) cited in the application page 6, line 31 - line 50; claim 1	1-9
X		10
A ✓	US 5 759 976 A (ANDERSON PATRICIA ET AL) 2 June 1998 (1998-06-02) claims	1-9
X		10
A ✓	EP 0 716 144 A (UNILEVER) 12 June 1996 (1996-06-12) page 7, line 4 - line 21; claims	1-9
X		10
	-/--	



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

## \* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

5 July 2000

Date of mailing of the international search report

17/07/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
 NL - 2280 HV Rijswijk  
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
 Fax: (+31-70) 340-3016

Authorized officer

Grittern, A



## INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/05292

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DATABASE WPI Section Ch, Week 9434 Derwent Publications Ltd., London, GB; Class D25, AN 94-276042 XP002111413 & JP 06 207199 A (KAO CORP), 26 July 1994 (1994-07-26) abstract	1-9
X	-----	10

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 00/05292

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
EP 0896052	A	10-02-1999	AU	8690298 A	01-03-1999
			EP	0896053 A	10-02-1999
			EP	1015546 A	05-07-2000
			WO	9907819 A	18-02-1999
			ZA	9807089 A	16-02-1999
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EP 0711828	A	15-05-1996	US	5658874 A	19-08-1997
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US 5759976	A	02-06-1998	AU	714999 B	13-01-2000
			AU	4934096 A	08-10-1996
			BR	9607840 A	16-06-1998
			CA	2215206 A	26-09-1996
			WO	9629387 A	26-09-1996
			DE	69602591 D	01-07-1999
			DE	69602591 T	07-10-1999
			EP	0815195 A	07-01-1998
			ES	2132895 T	16-08-1999
			ZA	9602339 A	16-09-1996
			AT	163193 T	15-02-1998
			AU	699430 B	03-12-1998
			AU	7607594 A	03-04-1995
			BR	9407538 A	26-08-1997
			CA	2169543 A	23-03-1995
			WO	9507976 A	23-03-1995
			DE	69408540 D	19-03-1998
			DE	69408540 T	04-06-1998
			EP	0719325 A	03-07-1996
			ES	2112558 T	01-04-1998
			JP	9503799 T	15-04-1997
			NZ	271952 A	24-10-1997
			US	5552079 A	03-09-1996
			US	5713384 A	03-02-1998
			ZA	9407064 A	24-04-1995
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EP 0716144	A	12-06-1996	US	5916866 A	29-06-1999
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JP 6207199	A	26-07-1994	NONE		
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09/914942

## PATENT COOPERATION TREATY

## PCT

REC'D 11 JUL 2001

WIPO

PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

14



Applicant's or agent's file reference ACR 2691 WO	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP00/01738	International filing date (day/month/year) 28/02/2000	Priority date (day/month/year) 05/03/1999
International Patent Classification (IPC) or national classification and IPC C07C219/06		
Applicant AKZO NOBEL N.V. et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.  
☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  
These annexes consist of a total of 4 sheets.

3. This report contains indications relating to the following items:

- ☒ Basis of the report
- ☐ Priority
- ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Lack of unity of invention
- ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Certain documents cited
- ☐ Certain defects in the international application
- ☒ Certain observations on the international application

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Date of submission of the demand 15/09/2000	Date of completion of this report 09.07.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Grammenoudi, S Telephone No. +49 89 2399 8324 

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP00/01738

## I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, pages:**

1-4,6-12 as originally filed

5 as received on 25/01/2001 with letter of 24/01/2001

**Claims, No.:**

1 (part),2-13 as originally filed

1 (part) as received on 26/04/2001 with letter of 25/04/2001

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/EP00/01738

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes:	Claims	1-13
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-13
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-13
	No:	Claims	

2. Citations and explanations  
**see separate sheet**

**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:  
**see separate sheet**

D2= WO-A-97/47588

**SECTION V**

1. The present application relates to quaternary ammonium compounds having at least one ester function (esterquats) and their use as fabric softeners.
2. Document D2 cited on page 1 of the description is considered to represent the closest state of the art. It discloses esterquats of formula I and their preparation by esterifying a quaternary ammonium compound of the formula II (see D2, claim 1). The problem to be solved by the present application with respect to this prior art is to provide alternative esterquats for use as fabric softeners.
3. The esterquats of present claim 1 differ from the known compounds in that the alcohol moiety involved in group Z contains at least 4 carbon atoms whereas the corresponding moiety in the esterquats according to D2 comprises up to 3 carbon atom. In order to arrive at the claimed compounds the applicant has found that substituted amino-2-hydroxy-3-butene can be further reacted with 1-2 moles of fatty acid per mole of this product. There is no suggestion in the prior art which would have motivated the skilled person to modify the esterquats of D2 in such a manner as to arrive at the compounds of the present invention. The presently claimed compounds cannot be made by the process of D2-a totally different process must be used.

Accordingly, the subject-matter of claims 1 (quaternary ammonium compounds), 8 (compositions comprising them), 9 (a process for their production) and 12 (their use) meets the requirements of Article 33(2) and (3) PCT.

4. Dependent claims 2-6, 10-11 and 13 concern particular embodiment of claims 1, 9 and 12 respectively. Thus, they also fulfil the criteria of Art. 33(2) and (3) PCT.
5. The compounds according to claim 7 are novel intermediates which contribute to the distinguishing inventive feature of the final products which they are used to produce. Furthermore these intermediates may also be used as fabric softeners themselves. Claim 7 therefore satisfies the requirements of Art. 33(2) and (3) PCT

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/EP00/01738

as well.

**SECTION VIII**

1. Dependent claims 2 and 3 still include isomers of the compounds claimed therein. As a result, the subject-matter of these claims extends beyond the scope claim 1 to which they refer (cf. Rule 6 PCT).

Replacement Sheet

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5

$R_1$  and  $R_2$  are independently selected from linear or branched, saturated or unsaturated  $C_{6-22}$  hydrocarbyl,

$R_3$  is nothing or  $C_{1-20}$  hydrocarbyl,

$R_4$  is  $C_{1-6}$  alkyl,  $C_{1-6}$  alkylene, or independent Z,

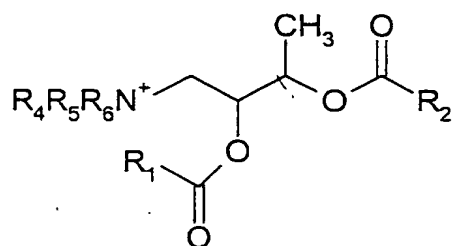
5  $R_5$  is H,  $C_{1-6}$  alkyl, independent Z, or the residue of the quaternizing agent, such as  $C_{1-30}$  alkyl or alkenyl, preferably,  $C_{1-7}$  alkyl or alkenyl,

$R_6$  is  $C_{1-6}$  alkyl or independent Z,

n is 1 or 2, and

$X^-$  is an ion selected from  $Cl^-$ ,  $Br^-$ ,  $I^-$ ,  $F^-$ ,  $CH_3SO_4^-$ ,  $C_2H_5SO_4^-$ ,  $H_2PO_4^-$ ,  $HPO_4^{2-}$ ,  
 10  $PO_4^{3-}$ ,  $H_2PO_3^-$ ,  $HPO_3^{2-}$ ,  $H_2PO_2^-$ ,  $HPO_2^{2-}$ , nitrate<sup>-</sup>, formate<sup>-</sup>, acetate<sup>-</sup>, propionate<sup>-</sup>, tartrate<sup>-</sup> and benzoate<sup>-</sup>, wherein the total charge of the anions equals the total charge of the cations. The compounds may be used after purification and/or isolation. Preferably, they are part of a composition comprising more than one of the compounds of formulae I-IV and isomers thereof, since extensive  
 15 isolation steps for the individual compounds can then be refrained from. Purification may include a bleaching and/or adsorption step to convert and/or remove chemicals that cause discolouration.

Preferred are compounds of formula (I), given in full below



20

X<sup>-</sup> (V)

or isomers thereof, wherein  $R_1$ - $R_6$  have the meaning as presented above.

More preferably, the compounds of the above formulae I-IV, or the isomers thereof, are of the formula wherein  $R_1$  and  $R_2$  ~~are  $C_{12-18}$~~  <sup>are  $C_{12-18}$</sup> . Even more preferably,

25  $R_1$  and  $R_2$  have a carbon distribution within the range such as can be found in

~~independently~~ are selected from linear or branched, saturated or unsaturated  $C_{12-18}$  alkyl.



## replacement sheet

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13

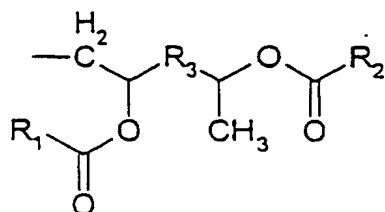
EPO - DG 1

26. 04. 2001

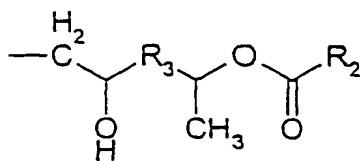
Claims

(52)

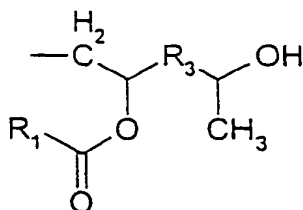
1. Quaternary ammonium compounds of the formula  $R_4[R_5R_6N^+Z]_n X^-$ ,  
 wherein Z is covalently bonded to the nitrogen atom and selected from the  
 group of the following formulae (I-IV)



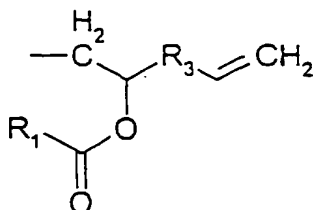
(I),



(II)



(III),



(IV),

10

and the ~~isomers of any of these compounds~~ wherein

$R_1$  and  $R_2$  are independently selected from linear or branched, saturated or unsaturated  $C_{6-22}$  hydrocarbyl,

$R_3$  is nothing or  $C_{1-20}$  hydrocarbyl,

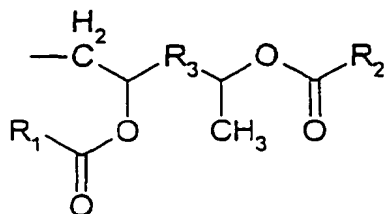
$R_4$  is  $C_{1-6}$  alkyl,  $C_{1-6}$  alkylene, or independent Z,

insert here new pages 13A and 13B

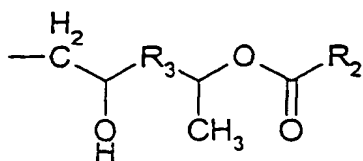
replacement sheet  
new page 13 A  
3

ACR 2691 R

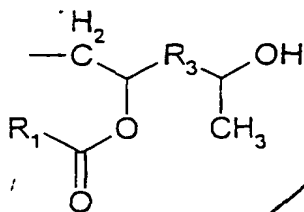
wherein Z is covalently bonded to the nitrogen atom, and of the following formulae (I-IV)



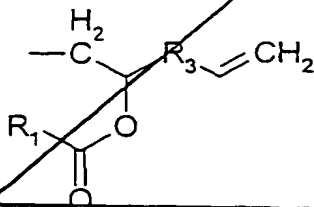
(I),



(II)

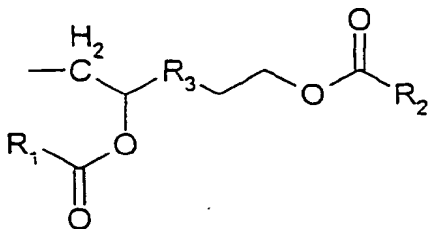


(III)

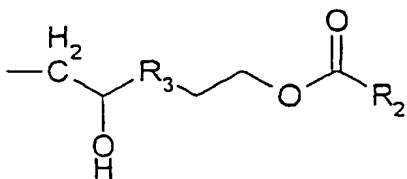


(IV)

isomers thereof with the formulae:



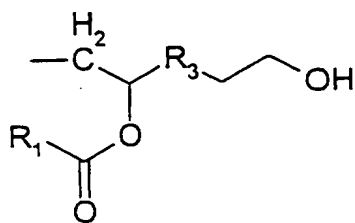
(Ia)



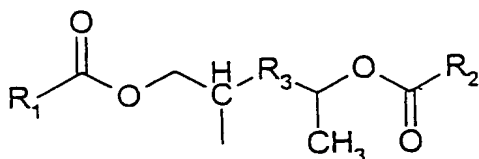
(IIa)

replacement sheet  
new page 13 B  
#

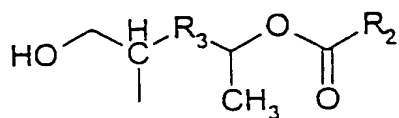
ACR 2691 R



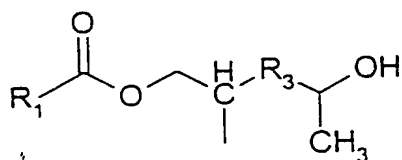
(IIIa)



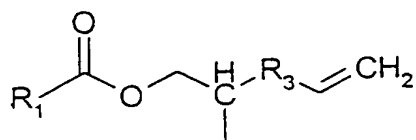
(Ib),



(IIb)

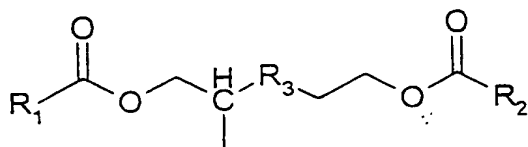


(IIIb)

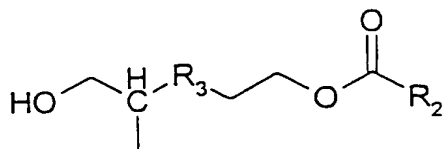


(IVb)

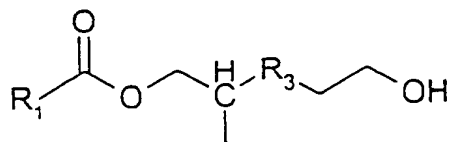
5



(Ic)



(IIc), and



(IIIc)

wherein,